

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Claims 1, 5, 8, 13-15, 18, 19, 25, 27, and 31 have been amended, and no claims have been canceled or added herein.

Listing of Claims

1. (Currently Amended) A method of transferring a set of data over a network between a local computing device and a remote computing device, the method comprising:

monitoring the level of actual network bandwidth utilization of a communications interface providing a network connection for the local computing device by periodically sampling, at the communications interface, an amount of incoming and outgoing data transferred over a given time period;

identifying a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual network bandwidth utilization of the ~~local computing device~~ communications interface, and wherein the maximum monitored level is identified when one or more data sets transferred over the communication interface are greater than a predetermined data size threshold;

calculating a threshold level of utilization as a function of the maximum monitored level of utilization; and

based on a determination that the actual level of utilization is less than the threshold level of utilization, transferring at least a portion of the set of data over

the network between the local computing device and the remote computing device.

2. (Original) The method of claim 1, wherein a client receives the data over the network from a server.

3. (Original) The method of claim 2, wherein said monitoring occurs at the interface between the client and the network.

4. (Original) The method of claim 1, wherein the network is the Internet.

5. (Currently Amended) The method of claim 1, wherein the threshold level of utilization is equal to a predetermined percentage of the maximum monitored level.

6. (Original) The method of claim 1, wherein the set of data includes a software update.

7. (Original) The method of claim 1, further comprising repeating at least said monitoring step each time a portion of the set of data is received.

8. (Currently Amended) The method of claim 7, wherein the method ~~said receiving step~~ includes separately receiving a plurality of discrete portions of the set of data over the network when the actual level of utilization is less than the threshold level of utilization.

9. (Original) The method of claim 8, further comprising incrementing a counter each time a discrete portion of the data is received over the network.

10. (Original) The method of claim 9, wherein the size of the discrete portions of the data is a function of the value of the counter.

11. (Canceled)

12. (Original) The method of claim 9, further comprising clearing the counter after receiving all of the plurality of discrete portions of the data over the network.

13. (Currently Amended) The method of claim 9, further comprising clearing the counter if the level of actual utilization becomes greater than the threshold level of utilization.

14. (Currently Amended) The method of claim 8, further comprising suspending the receipt of discrete portions of the data if the level of actual utilization becomes greater than the threshold level of utilization.

15. (Currently Amended) The method of claim 14, further comprising resuming the receipt of discrete portions of the data from the point of suspension when the level of actual utilization becomes less than the threshold level of utilization.

16. (Original) The method of claim 1, further comprising:

repeating said monitoring step each time a portion of the set of data is received;

identifying a maximum level of utilization during receipt of the set of data;

and

calculating a threshold level of utilization for the set of data as a function of the maximum level of utilization identified during receipt of the set of data.

17. (Original) The method of claim 16, wherein said identifying step includes estimating the maximum level of utilization during receipt of the set of data by calculating an average level of utilization for the set of data upon repeating said monitoring step a predetermined number of times during receipt of the set of data.

18. (Currently Amended) The method of claim 16, further comprising receiving at least a portion of the set of data over the network if the actual level of utilization is less than the threshold level of utilization for the set of data.

19. (Currently Amended) The method of claim 16, further comprising receiving at least a portion of a second set of data over the network if the actual level of utilization is less than the threshold level of utilization for the set of data.

20. (Previously Presented) A computer-storage medium having computer-executable instructions for performing the method recited in claim 1.

21. (Previously Presented) A computer system having a memory, an operating system and a central processor, said processor being operable to execute the instructions stored on the computer-storage medium of claim 20.

22. (Previously Presented) A computer-storage medium having stored thereon a data structure useable by a computing device for transferring data over a network, the data structure comprising:

a first data field containing data representing a maximum monitored level, wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization; and

a second data field containing data representing a threshold level of network bandwidth utilization below which data may be transferred over the network without interfering with other network activity, wherein said second data field is derived from said first data field by calculating the threshold level as a function of the maximum monitored level, and wherein the threshold level is utilized for determining when to transfer data over the network.

23. (Previously Presented) The computer-storage medium of claim 22, wherein the threshold level is calculated as a predetermined percentage of the maximum monitored level.

24. (Previously Presented) The computer-storage medium of claim 22, wherein the actual network bandwidth utilization is monitored at an interface between a client machine and the network.

25. (Currently Amended) A computer-storage medium having computer-executable components for managing the transfer of data over a network between a local computing device and a remote computing device, comprising:

a bandwidth monitoring component which;

monitors the level of actual bandwidth utilization for a network connection of the local computing device by periodically sampling an amount of

incoming and outgoing data transferred over a given time period for data sets greater than a predetermined size threshold, and

identifies a maximum monitored level, wherein the maximum monitored level is a maximum of the monitored level of actual bandwidth utilization for the network connection of the local computing device;

a threshold calculating component which calculates a threshold level of utilization as a function of the maximum monitored level of utilization identified by said bandwidth monitoring component; and

a transfer management component which manages the transfer of data over the network between the local computing device and the remote computing device when the level of actual bandwidth utilization is less than the threshold level of utilization.

26. (Previously Presented) The computer-storage medium of claim 25, wherein the network connection is an interface between a client machine and the network.

27. (Currently Amended) The computer-storage medium of claim 25, wherein the threshold level of utilization is calculated as a predetermined percentage of the maximum monitored level.

28. (Previously Presented) A method of communicating between a client process and a server process over a network, the method comprising:

(a) issuing to the server process a first download request which identifies a file and which requests that the server process transfer a first segment of the file over the network to the client process when an actual network

bandwidth utilization for the client process is less than a threshold level below which data may be transferred over the network without interfering with other network activity for the client process, wherein the threshold level is calculated as a function of a maximum monitored level, and wherein the maximum monitored level is a maximum of a monitored level of actual network bandwidth utilization for the client process;

(b) receiving, from the server process, the first segment of the file;

(c) issuing to the server process a further download request which is associated with the file and which requests that the server process transfer a further segment of the file over the network when the actual network bandwidth utilization is less than the threshold level;

(d) receiving, from the server process, the further segment of the file;

and

(e) repeating steps (c) and (d) until the server process has transferred each segment of the file over the network.

29. (Previously Presented) The method of claim 1, wherein a client machine receives the data over the network without substantially interfering with the ability of a user of the client machine to engage in other network activity.

30. (Previously Presented) The method of claim 1, wherein the data is received over the network without substantially interfering with any other network activity.

31. (Currently Amended) A method for a computer to regulate a data transfer between the computer and a network through which the computer communicates, the method being performed by the computer and comprising:

monitoring a changing rate of amount of data communicated between the network and the computer by periodically sampling an amount of incoming and outgoing data transferred between the network and the computer over a given time period;

repeatedly determining a changing maximum of the rate of amount of data communicated between the network and the computer;

repeatedly determining a changing threshold rate of data communication based on the changing maximum rate of amount of data communicated between the network and the computer; and

repeatedly determining whether to resume or suspend the data transfer between the network and the computer based on the changing threshold rate of data communication and based on the changing rate of amount of data communicated between the computer and the network, and resuming or suspending the data transfer accordingly.